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Inguinal hernia coexisting with spermatic cord leiomyoma

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Dear Editor,

Leiomyomas are most commonly found in the uterus, followed by the small bowel and esophagus. Although rare, there have been limited reports of leiomyomas arising from the genitourinary system, which includes the bladder, epididymis, prostate, testis, and penis.[1,2] Scrotal leiomyomas, classified within the category of genital leiomyomas, present as solitary growths of uncertain origin and can manifest within various scrotal structures, such as the epididymis, spermatic cord, tunica albuginea, or scrotal wall. They exhibit a gradual growth pattern over time. It is noteworthy that spermatic cord leiomyoma represents an exceptionally rare condition, with fewer than thirty cases documented in the medical literature since the 1950s.[3]

This study aims to delineate the clinical and radiological attributes of the infrequently encountered spermatic cord leiomyoma and discern its differential diagnosis.

A 63-year-old male patient presented to the general surgery clinic with complaints of pain and swelling in the left groin. Upon taking the medical history, it was revealed that the patient had been experiencing swelling for an extended period, intermittently accompanied by pain. The patient had no known pre-existing medical conditions or prior surgical history. Physical examination revealed the presence of a reducible hernia in the left inguinal region, along with the palpation of a mobile, solid mass measuring approximately 3 cm in diameter.

An ultrasound (US) examination was performed on the patient, which revealed a well-defined solid hypoechoic lesion measuring approximately 35x25 mm. This lesion exhibited minimal vascularity, without any evidence of hilar vascularity. Both testicles were visualized within the scrotal sac. In the differential diagnosis, conditions such as lymphadenopathy, desmoid tumor, and paratesticular tumors, such as spermatic cord tumors, were considered due to the inguinal location of the mass. To further characterize the lesion, magnetic resonance imaging (MRI) was conducted.

The MRI imaging identified a solid lesion in the left inguinal region measuring 37x24 mm, displaying an ovoid appearance (Figure 1). This lesion was iso-hypointense relative to the adjacent muscle tissue on T2-weighted imaging and exhibited hyperintensity on fat-saturated T1-weighted images compared to muscle tissue. Additionally, a hyperintense rim was observed on fat-saturated T1-weighted images. Post-contrast T1-weighted images demonstrated moderate contrast enhancement. Sagittal images revealed a tail-like appearance, suggesting its origin from the spermatic cord. Notably, tumor markers and blood values were entirely within normal ranges.

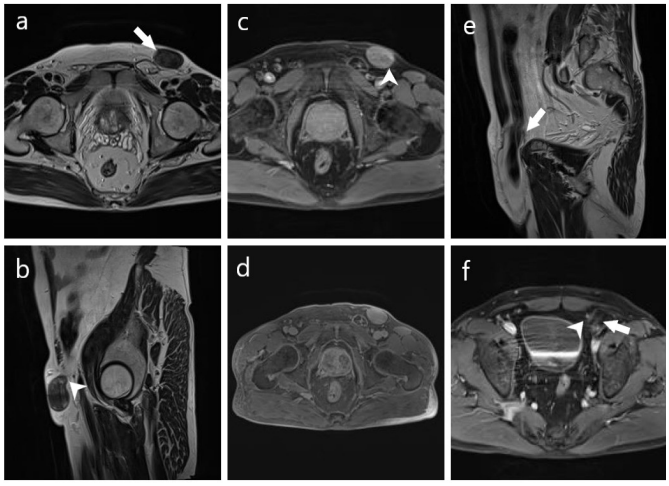

Figure 1. Indirect Inguinal Hernia with Spermatic Cord Leiomyoma
In the T2-weighted (T2W) axial (a) and sagittal (b) Magnetic Resonance Imaging (MRI) images, a hypointense lesion (arrow) with a tail-like appearance (arrowhead), presumed to originate from the spermatic cord, is observed. Additionally, the fat-saturated T1-weighted (T1W) image (c) shows hyperintensity compared to muscle tissue, with the presence of a hyperintense rim (arrowhead). Moderate contrast enhancement is demonstrated in the T1W subtraction image (d). The T2W sagittal (e) and T1W axial (f) MRI images illustrate the indirect inguinal hernia, with the hernia defect (arrow) located laterally to the inferior epigastric artery (arrowhead).

The patient underwent a surgical procedure comprising hernia repair and mass excision. A standard inguinal incision was made to access the surgical site, followed by meticulous dissection of the spermatic cord to expose the mass, the etiology of which remained unknown. Care was taken to preserve vital adjacent structures such as the vas deferens and testicular vessels. The mass was excised precisely, ensuring complete removal while minimizing disruption to neighboring anatomical elements. Concurrently, hernia repair was performed using a standardized technique,

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addressing the inguinal hernia and ensuring inguinal canal closure to prevent recurrence. Following the surgical procedure, the patient experienced an uneventful recovery and was discharged from the hospital after a two-day stay.

In the excised mass, the Hematoxylin-Eosin (H&E) staining revealed focal lipocytes and areas of hyaline degeneration amidst smooth muscle fibers. Additionally, cytoplasmic staining was observed in smooth muscle cells and fibers through Desmin and Muscle Specific Actin (MSA) staining (Figure 2). Based on these findings, a diagnosis of leiomyoma was established.

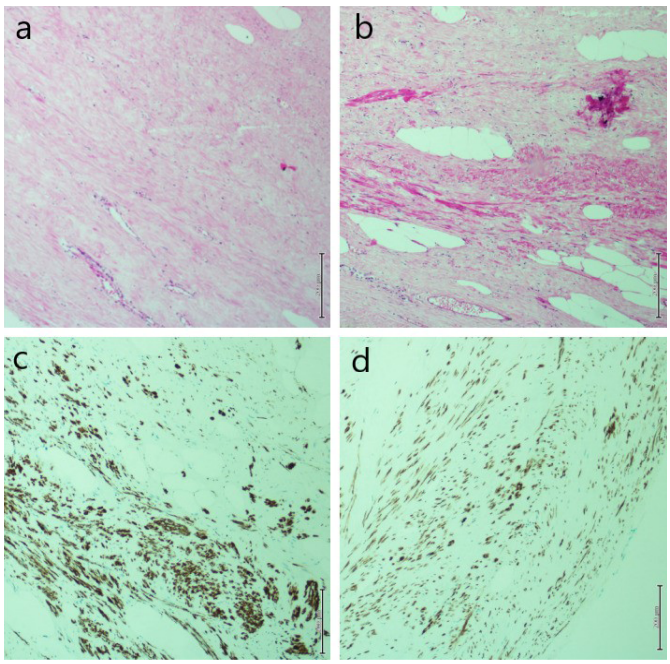

Figure 2. Leiomyoma Microscopy
(a) and (b) Hematoxylin-Eosin (H&E) staining, showing focal lipocytes and areas of hyaline degeneration between smooth muscle fascicles. (c) Desmin staining, indicating cytoplasmic staining in smooth muscle cells. (d) Muscle Specific Actin (MSA) staining, demonstrating cytoplasmic staining in smooth muscle fibers. Magnification: 10x.

Written informed consent was obtained from the patient.

Spermatic cord tumors constitute a rare and heterogeneous group of neoplasms. They are predominantly benign in origin, with malignant tumors being exceedingly rare. Benign tumors within this category include lipoma, leiomyoma, rhabdomyoma, cellular angiofibroma, hemangioma, and aggressive angiomyxoma.[4] In our case, as in many instances, spermatic leiomyomas present as slow-growing solitary masses in the paratesticular or inguinal region and can mimic hernias. In our case, a solitary mass was accompanied by a hernia.[3]

The MRI findings played a pivotal role in the diagnostic process. The lesion's hypointensity on T2-weighted MRI images allowed us to exclude lipoma, cellular angiofibroma, aggressive angiomyxoma, and hemangioma as potential diagnoses. Furthermore, the characteristic tail-like appearance on sagittal imaging led us to rule out lymphadenopathy, given the lesion's presumed origin from the spermatic cord. Additionally, desmoid tumors were not considered due to the absence of a surgical history and lack of association with the abdominal wall. Consequently, the MRI characteristics strongly supported the diagnosis of leiomyoma.

Inguinal Region Solitary Masses have a considerably broad range of differential diagnoses, and MRI plays a valuable role in their diagnosis. As in our case, scrotal leiomyoma typically manifests in the fifth decade of life and exhibits slow growth. Literature has also reported cases with bilateral involvement.[5] They can be associated with hydrocele and hernia. Malignancy cannot be ruled out, and surgical excision is often necessary in such cases.

In summary, this case report highlights the rare occurrence of spermatic cord leiomyoma and emphasizes the role of MRI in its accurate diagnosis. Although benign, this slow-growing tumor can mimic hernias, necessitating surgical excision for definitive diagnosis and management. This case underscores the importance of considering leiomyoma in the differential diagnosis of inguinal masses and the valuable role of MRI in preoperative assessment.

Keywords: Inguinal hernia, spermatic cord, leiomyoma, magnetic resonance imaging (MRI), surgical excision

ETHICAL DECLARATIONS

Informed Consent

The patient signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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